

B. DUAL USE SCIENCE AND TECHNOLOGY PROGRAM



The ability of the United States to retain technological superiority on future battlefields will, in many cases, depend on the Nation's ability to take advantage of technological advances occurring in commercial industry. Commercial technology developments in areas such as electronics, advanced computing, communications, and

medical research are racing forward. These commercial developments are funded at levels that vastly exceed what the DoD is currently able to apply. Greater reliance on commercial technologies will not only provide the Defense Department access to advances in technologies occurring in the commercial sector, but also will allow the Department to take advantage of the competitive pressures and market-driven efficiencies inherent in the commercial sectors. This competitive, market-driven approach will increase the pace at which technological improvements are incorporated into Defense systems, while at the same time reducing the costs of those systems.

The Department of Defense Dual Use Science and Technology (DU S&T) Program is designed to help the Department incorporate commercial technologies into Defense systems. The Program was established in the FY 98 Defense Authorization Act. It has two primary goals. The first goal is to jointly fund and develop dual use technologies with industry. To support this goal, the Act provides for 50/50 government/industry cost share of development. Other incentives for industry to work with the DoD DU S&T Program include access to technology from the government and increased market opportunities with the Military Services. In addition to these business incentives, the Department is making it easier for commercial companies to enter into agreements with the DoD by using procedures that are not subject to most of the Federal procurement laws and regulations. These procedures known as "Technology Investment Agreements," which include "Other Transactions" and "Cooperative Agreements," offer greater flexibility and fewer regulatory requirements than standard government contracting. The use of alternative procedures has provided the Department the ability to attract many commercial firms that would not otherwise do business with the DoD. The second goal is to make the development of dual use technologies with industry a normal way of doing business in the Services. The FY 98 Authorization Act has established goals for the initiation of dual use projects. These goals start at 5% of each Department's applied research program in FY 98 and grows to 15% by 2001. The Military Services are actively working to meet these goals through the DU S&T Program.

More than 200 companies, universities, and nonprofits are currently participating in the DU S&T Program. In the first three years, 218 projects have been initiated with a total value of over \$700 million dollars. In addition to the growing size of investments, it is encouraging to see the number of commercial firms that have become involved in the Program. These firms are bringing many new ideas to the table. Service participation in the DU S&T Program has been key to the Program's success. The execution of the Program is transitioning from OSD to the Services. A fourth solicitation for proposals was issued for FY 00 in January 1999 and closed on May 4, 1999. As with the previous solicitation, this was a joint solicitation issued by the Navy and was used as a vehicle to launch an extensive outreach effort to industry. In February 1999, the DU S&T Investment Strategy Conference was held in Chicago. This was another successful conference with over 225 participants. This approach to educating industry about the Program and solicitation has proven very successful. As a result of this solicitation, the Services are currently negotiating 72 proposals for a total value of approximately \$126 million worth of Dual Use technology.

The FY 01 solicitation is to be released in January 2000 and will close at the end of April 2000. It is a joint solicitation being released by the Air Force. The following technology focus areas are being solicited:

- Affordable Sensors
- Weapons Systems Sustainment
- Distributed Mission Training
- Advanced Propulsion, Power & Fuel Efficiency
- Information and Communications Systems
- Medical and Bioengineering Technologies
- Advanced Materials and Manufacturing
- Environmental Monitoring

Approximately \$60 million in government funding (\$30 million Service DU S&T and \$30 million Service field funds) are anticipated to form new partnerships with industry and to bring commercial technology development to the benefit of the Department.

The DU S&T Program will submit a report to Congress this March. The report will include a complete description of the program and a summary of the FY 99 projects.

Examples of Some Projects Underway:

Optical Character Recognition (OCR)

This 1997 project is improving the Army's ability to collect and analyze intelligence from foreign language documents in the low-quality form that is typically found in the field by eliminating the gross inaccuracies of the commercial-off-the-shelf OCR currently being used. This enhanced capability will provide troops in the field the ability to quickly react to intelligence information. The commercial market is interested in documents from the Arabic world, where electronically represented text is relatively new and original documents must be scanned and converted.

Thermal Sprayed Nanostructural Coatings for Dual Use Applications

This 1997 project is developing highly wear, erosion, and corrosion resistant nanostructured coatings for use on ship, aircraft and land vehicles. The coatings will reduce life-cycle costs and better comply with environmental regulations. The technology is currently a leading candidate for a special Secretary of the Navy initiative to fast-track technology into the fleet. Commercial uses are in automobiles, aircraft gas turbine engines, machine tools, and mining equipment. Industry has made additional investments to begin commercializing this technology.

Affordable Antenna for Weapon System Delivery & Cellular Communications

This 1998 project will result in an affordable airborne antenna that is as capable as current antennas used in weapon systems, with higher reliability, and at only 10% of the cost of development. In addition, the antenna can be assembled in 15 minutes. The technology being utilized is scaleable for commercial cellular communications. Over 2,000 of the commercial version antennas have been sold for use in telecommunications.